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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/791,772	03/04/2004	Takashi Naganawa	520.43593X00	4408
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EXAMINER

PAPE, ZACHARY

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/791,772	Applicant(s) NAGANAWA ET AL.	
	Examiner Zachary M. Pape	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6 and 8 is/are rejected.
- 7) ☒ Claim(s) 4, 5 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/12/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 3, 6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 3, it is unclear to the examiner whether the recitation, "said radiator has at least two (2) pieces of metal conduits" is referring back to the "metal conduit" of claim 2, or is defining another, separate pair of metal conduits.

With respect to claim 6, the applicant recites, "to be about "S" in shape thereof" which is indefinite since the word, "about" is open ended and does not definitively describe the shape of the partition.

With respect to claim 8, the applicant recites, "a member building up said cooling system has a suction port and a discharge port" which is unclear to the examiner. Specifically the recitation, "a member building up" is unclear since it appears to be out of context when compared to the rest of the claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Cheon (US 2004/0008483).

With respect to claim 1, Cheon teaches a liquid cooling system (20), comprising: a heat-receiving jacket (11) for absorbing heat of a heat-generation element through a liquid flowing with an inside thereof; a radiator (222) for radiation heat from a surface thereof; and a pump (23) for transporting said liquid absorbing the heat therein to said radiator, wherein said pump is connected to said radiator, directly (As illustrated in Fig 1).

With respect to claim 2, Cheon teaches a liquid cooling system (20), comprising: a heat-receiving jacket (11) for absorbing heat generated from a semi-conductor through a liquid, which is enclosed within an inside thereof; a radiator (222) being connected with said heat-receiving jacket (11) through a flexible conduit (21) therebetween; a tank (24) being connected to said radiator through a conduit (See Present office action Fig 1 below); and a pump (23) for circulating said liquid, further comprising: a plural number of fins being attached onto a metal conduit of said radiator passing the liquid passes therethrough (See Paragraph 43, Line 3 – also see Cheon Fig 5), wherein said pump is connected to said tank (As illustrated in Cheon Fig 1), which is connected to said metal conduit, directly (Via the conduit as illustrated in the present office action Fig 1 below).

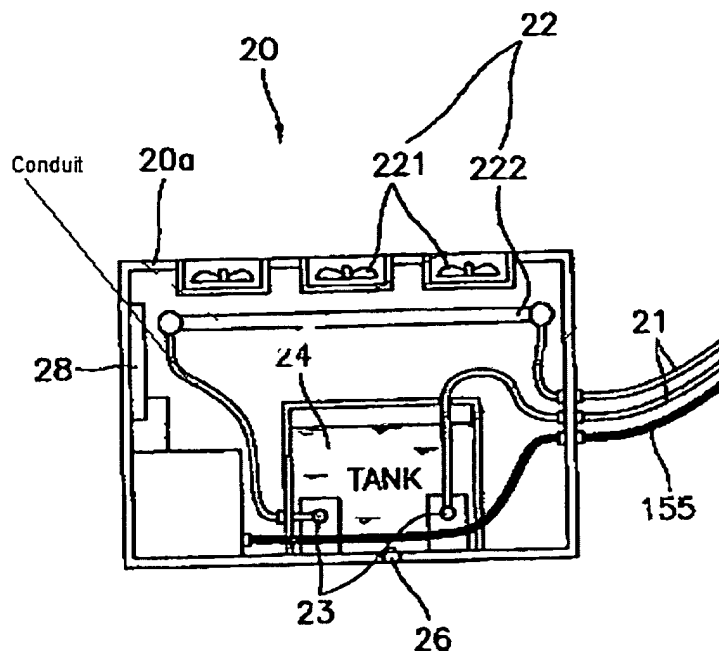


Fig 1

With respect to claim 8, as best can be understood by the examiner, Cheon teaches a liquid cooling system (20), comprising: a heat-receiving jacket (11) for absorbing heat generated from a semiconductor element through a liquid enclosed in an inside thereof; a radiator (222) being connected to said heat-receiving jacket through a conduit (See present office action Fig 1 above); and a pump (23) for circulating said liquid, wherein: a member building up said cooling system has a suction port (See present office action Fig 2 below) and a discharge port (See present office action Fig 2 below), and is connected by inserting those ports into port insertion openings, which are provide in said conduits (The suction port and discharge port of the "built up" cooling system are connected to the conduits via openings in the conduits such that the fluid can flow from the cooling system to the conduit and vice versa).

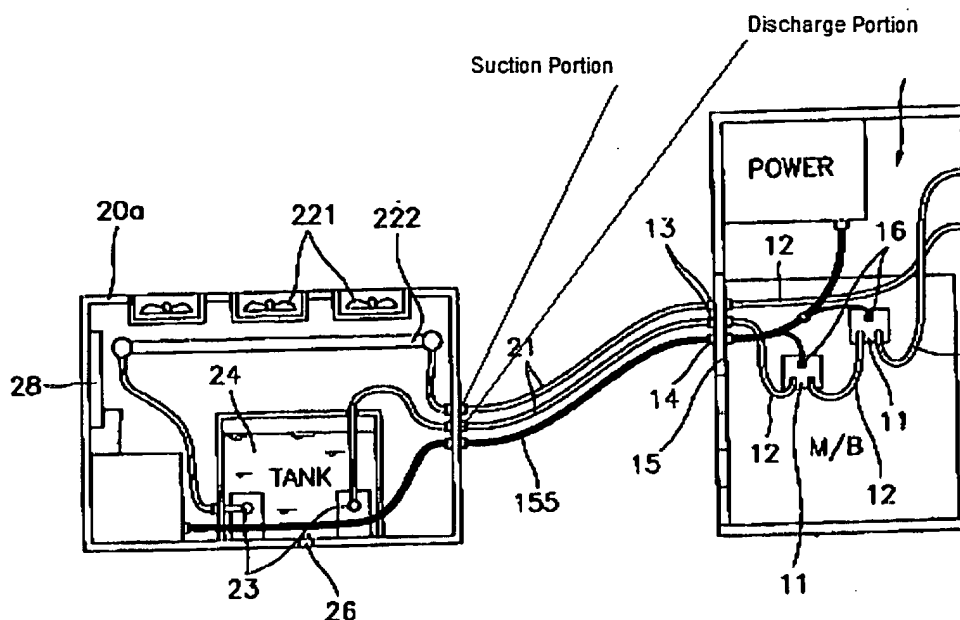


Fig 2

Allowable Subject Matter

3. Claims 4-5, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. Claims 3 and 6 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 3, the allowability resides in the overall structure of the device as recited in dependent claim 3 and at least in part because said claim 3 recites,

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"said radiator has at least two pieces of metal conduits, whereby forming a suction conduit of said pump from one of said metal conduits, while a discharge conduit to said heat-receiving jacket from the other of said conduits, and said suction and discharge conduits are communicated with an inside of said tank".

The aforementioned limitations in combination with all remaining limitations of claims 2 and 3 are believed to render said claim 3 patentable over the art of record.

With respect to claim 4, the allowability resides in the overall structure of the device as recited in dependent claim 4 and at least in part because said claim 4 recites, "a suction port and a discharge port are provided on said pump".

The aforementioned limitations in combination with all remaining limitations of claims 2 and 4 are believed to render said claim 4 patentable over the art of record.

With respect to claim 5, the allowability resides in the overall structure of the device as recited in dependent claim 5 and at least in part because said claim 5 recites, "said tank is divided into two spaces with a partition plate".

The aforementioned limitations in combination with all remaining limitations of claims 2 and 4 are believed to render said claim 4 and all dependents therefrom (7) patentable over the art of record.

With respect to claim 6, the allowability resides in the overall structure of the device as recited in dependent claim 6 and at least in part because said claim 4 recites, "a partition plate for separating an inside of said tank into two is formed to be about "S" in shape thereof".

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The aforementioned limitations in combination with all remaining limitations of claims 2 and 6 are believed to render said claim 6 patentable over the art of record.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2005/0178528; US 2005/0180105; US 2005/0180107; US 6,313,990 all further teach liquid cooling with a radiator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary M. Pape whose telephone number is 571-272-2201. The examiner can normally be reached on Mon. - Thur. & every other Fri. (8:00am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached at 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**ANATOLY VORTMAN
PRIMARY EXAMINER**